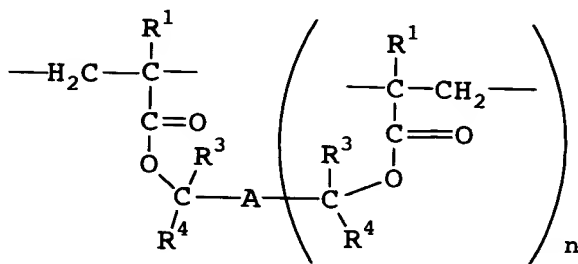


[illegible]

1. In a method for the preparation of a semiconductor device by forming a patterned resist layer on the surface of a substrate by pattern-wise light-exposure of a photoresist layer of a chemical-amplification positive-working photoresist composition comprising (A) a compound capable of generating an acid by irradiation with actinic rays and (B) a resinous compound capable of being imparted with increased solubility in an aqueous alkaline solution in the presence of an acid, the improvement which comprises decreasing the number of defects in the patterned resist layer by using a photoresist composition of which a layer before the pattern-wise light-exposure exhibits reduction of thickness at 23 °C in a 2.38% by weight aqueous solution of tetramethylammonium hydroxide at a rate in the range from 0.09 to 1.0 nm/second.
2. The improvement as claimed in claim 1 in which the resinous compound as the component (B) of the photoresist composition is a copolymeric resin (B-1) comprising monomeric units of hydroxystyrene or α -methyl hydroxystyrene substituted by acid-dissociable groups for the hydrogen atoms of the hydroxyl groups and monomeric units of hydroxystyrene or α -methyl hydroxystyrene.
3. The improvement as claimed in claim 2 in which the acid-dissociable group is selected from the group consisting of tertiary alkyloxycarbonyl groups, tertiary alkyloxycarbonylalkyl groups, tertiary alkyl groups, cyclic ether groups and alkoxyalkyl groups.
4. The improvement as claimed in claim 3 in which the acid-dissociable group is selected from the group consisting of tert-butyloxycarbonyl group, tert-butyloxycarbonylmethyl group, tert-butyl group, tetrahydropyranyl group, tetrahydrofuranyl group, 1-ethoxyethyl group and 1-methoxypropyl group.

- Sp

in which R¹ is a hydrogen atom or a methyl group, R² is an alkyl group having 1 to 5 carbon atoms and the subscript m is an integer in the range from 3 to 7, and (b4) monomeric units of a fourth type represented by the general formula



in which R¹ has the same meaning as defined above, R³ and R⁴ are each an alkyl group having 1 to 5 carbon atoms, the subscript n is 1, 2 or 3 and A is a single bond or an organic residue of (n+1) valency.

14. The improvement as claimed in claim 13 in which R^2 in the general formula representing the monomeric units (b3) is an ethyl group.
15. The improvement as claimed in claim 13 in which, in the general formula representing the monomeric units (b4), the subscript n is 1 and A is a straightly linear or branched alkylene group or a partially or totally cyclized alkylene group.
16. The improvement as claimed in claim 13 in which, in the general formula representing the monomeric units (b4), the subscript n is 1, A is a straightly linear alkylene group having 2 to 10 carbon atoms and R^3 and R^4 are each a methyl group.
17. The improvement as claimed in claim 13 in which the molar fractions of the monomeric units (b1), (b2), (b3) and (b4) are in the ranges of from 50 to 80%, from 1 to 25%, from 3 to 25% and from 1 to 15%, respectively.

- [illegible]